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# 30 New Chromospherically Active Stars in the ASAS-3 Data Base

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| # | Name | Other | Coord (J2000) | Type | Max | Min | System | Period | Epoch (JD) | type | Sp | Comment | L.Curve | Find.Chart | Data |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | GSC 04667-00090 | 00 15 07.58, -03 20 00.2 | RS | 11.31 | 11.62 | V | 8.840 | 2454768.70 | min | | Comm. 1 | GSC_04667_00090.jpg | | GSC_04667_00090 |
| 2 | | GSC 08030-00738 | 00 34 06.11, -51 03 01.3 | RS | 9.43 | 9.71 | V | 82.0 | 2452243.5 | min | | Comm. 2 | GSC_08030_00738.jpg | | GSC_08030_00738 |
| 3 | | GSC 05282-02210 | 02 19 47.39, -10 25 40.7 | RS | 10.45 | 10.96 | V | 8.115 | 2452674.54 | min | K0e | Comm. 3 | GSC_05282_02210.jpg | | GSC_05282_02210 |
| 4 | | GSC 08054-00859 | 02 51 11.38, -47 53 07.9 | BY | 11.67 | 12.15 | V | 13.27 | 2453671.66 | min | K5 | Comm. 4 | GSC_08054_00859.jpg | | GSC_08054_00859 |
| 5 | | GSC 08499-00639 | 03 27 39.75, -58 09 49.9 | RS | 10.80 | 11.48 | V | 4.081 | 2453654.75 | min | K2IVe | Comm. 5 | GSC_08499_00639.jpg | | GSC_08499_00639 |
| 6 | | GSC 07572-00109 | 03 34 09.58, -41 43 49.8 | RS | 11.23 | 11.68 | V | 15.30 | 2454763.71 | min | | Comm. 6 | GSC_07572_00109.jpg | | GSC_07572_00109 |
| 7 | | GSC 07570-01523 | 03 59 36.73, -39 53 14.9 | RS | 9.42 | 9.82 | V | 9.924 | 2452093.94 | min | K0 | Comm. 7 | GSC_07570_01523.jpg | | GSC_07570_01523 |
| 8 | | GSC 08868-01984 | 04 00 37.30, -60 13 59.1 | RS | 11.77 | 12.21 | V | 3.303 | 2452128.81 | min | | Comm. 8 | GSC_08868_01984.jpg | | GSC_08868_01984 |
| 9 | | GSC 05886-01101 | 04 14 43.35, -18 52 12.5 | RS | 9.28 | 9.65 | V | 61.69 | 2454379.8 | min | | Comm. 9 | GSC_05886_01101.jpg | | GSC_05886_01101 |
| 10 | | GSC 05960-00586 | 06 34 36.36, -21 33 05.7 | RS | 12.40 | 13.03 | V | 16.182 | 2454459.67 | min | | Comm. 10 | GSC_05960_00586.jpg | | GSC_05960_00586 |
| 11 | | GSC 04806-03158 | 06 36 56.33, -05 21 03.6 | BY | 11.39 | 12.41 | V | 5.028 | 2454190.55 | min | K7 | Comm. 11 | GSC_04806_03158.jpg | | GSC_04806_03158 |
| 12 | | GSC 07111-00598 | 07 17 49.81, -33 56 40.1 | RS | 12.76 | 13.46 | V | 30.58 | 2452054.47 | min | | Comm. 12 | GSC_07111_00598.jpg | | GSC_07111_00598 |
| 13 | | GSC 00186-01142 | 07 36 41.89, +03 54 19.8 | RS | 10.91 | 11.42 | V | 19.28 | 2452946.79 | min | | Comm. 13 | GSC_00186_01142.jpg | | GSC_00186_01142 |
| 14 | NSV 17584 | GSC 01370-00450 | 07 45 16.39, +20 23 16.5 | RS | 9.58 | 9.71 | V | 12.134 | 2452678.62 | min | G5 | Comm. 14 | GSC_01370_00450.jpg | | GSC_01370_00450 |
| 15 | | GSC 08601-03383 | 10 35 33.01, -53 52 27.6 | RS | 10.74 | 11.05 | V | 15.52 | 2451914.77 | min | | Comm. 15 | GSC_08601_03383.jpg | | GSC_08601_03383 |
| 16 | | GSC 07739-02180 | 11 21 05.63, -38 45 16.5 | BY | 12.42 | 12.97 | V | 3.3034 | 2454901.72 | min | M1Ve | Comm. 16 | GSC_07739_02180.jpg | | GSC_07739_02180 |
| 17 | | GSC 07222-00557 | 11 57 48.75, -33 35 53.3 | RS | 10.80 | 11.19 | V | 56.9 | 2452782.6 | min | | Comm. 17 | GSC_07222_00557.jpg | | GSC_07222_00557 |
| 18 | | GSC 08216-02427 | 11 58 23.41, -45 57 31.3 | RS | 11.65 | 11.98 | V | 8.870 | 2451913.82 | min | | Comm. 18 | GSC_08216_02427.jpg | | GSC_08216_02427 |
| 19 | NSV 19379 | GSC 09412-00776 | 12 24 47.78, -75 03 09.4 | BY | 10.43 | 10.79 | V | 8.308 | 2455023.578 | min | K3Ve | Comm. 19 | GSC_09412_00776.jpg | | GSC_09412_00776 |
| 20 | | GSC 00881-00657 | 12 35 57.41, +13 29 25.3 | RS | 10.07 | 10.53 | V | 4.531 | 2452793.52 | min | | Comm. 20 | GSC_00881_00657.jpg | | GSC_00881_00657 |
| 21 | | GSC 08346-02034 | 17 36 04.03, -47 10 09.8 | RS | 10.14 | 10.69 | V | 12.520 | 2451949.89 | min | K1IIIe | Comm. 21 | GSC_08346_02034.jpg | | GSC_08346_02034 |
| 22 | | GSC 07896-02299 | 17 36 51.68, -44 20 06.8 | RS | 9.95 | 10.27 | V | 41.3 | 2452135.5 | min | | Comm. 22 | GSC_07896_02299.jpg | | GSC_07896_02299 |
| 23 | | GSC 00424-01952 | 17 46 25.44, +03 58 48.9 | RS | 9.41 | 9.67 | V | 8.447 | 2454383.45 | min | | Comm. 23 | GSC_00424_01952.jpg | | GSC_00424_01952 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | NSV 24393 | GSC 06856-01956 | 18 19 52.21, -29 16 32.8 | RS | 8.74 | 8.95 | V | 0.570832 | 2454245.770 | min | G5V | Comm. 24 | GSC_06856_01956.jpg | | GSC_06856_01956 |
| 25 | | GSC 00450-00064 | 18 32 18.96, +02 14 54.0 | RS | 11.20 | 11.90 | V | 12.84 | 2454375.32 | min | K2IIIe | Comm. 25 | GSC_00450_00064.jpg | | GSC_00450_00064 |
| 26 | | GSC 07967-01203 | 20 45 11.53, -40 49 57.6 | RS | 10.60 | 10.97 | V | 3.5913 | 2452810.74 | min | | Comm. 26 | GSC_07967_01203.jpg | | GSC_07967_01203 |
| 27 | | GSC 07967-00420 | 20 45 36.81, -39 49 56.8 | RS | 9.82 | 10.21 | V | 12.40 | 2452031.93 | min | K0IIIe | Comm. 27 | GSC_07967_00420.jpg | | GSC_07967_00420 |
| 28 | | GSC 09112-00277 | 20 46 55.64, -66 53 00.2 | RS | 10.57 | 10.92 | V | 39.53 | 2452085.8 | min | | Comm. 28 | GSC_09112_00277.jpg | | GSC_09112_00277 |
| 29 | | GSC 07476-00713 | 21 12 19.05, -33 36 20.2 | RS | 12.40 | 13.05 | V | 9.143 | 2452088.74 | min | | Comm. 29 | GSC_07476_00713.jpg | | GSC_07476_00713 |
| 30 | | GSC 05226-01180 | 22 20 29.92, -01 39 58.2 | RS | 12.14 | 12.71 | V | 9.097 | 2452494.71 | min | | Comm. 30 | GSC_05226_01180.jpg | | GSC_05226_01180 |

**Comments:**

1. Johnson B–V = 1.423 (derived from Tycho-2); J–K = 0.756 (2MASS).
Proper motion: pmRA = 14.1 mas/yr, pmDE = –1.2 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS-F J001507.4–032010, HR1 = 0.78, HR2 = 0.07.
ASAS variable type: DCEP-FU/ELL.

2. Johnson B–V = 1.050 (derived from Tycho-2); J–K = 0.671 (2MASS).
Proper motion: pmRA = 7.7 mas/yr, pmDE = 4.0 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS-F J003408.1–510305, HR1 = –0.08, HR2 = 0.24.
ASAS variable type: EC/ESD.

3. Johnson B–V = 1.076 (derived from Tycho-2); J–K = 0.762 (2MASS).
Proper motion: pmRA = 14.9 mas/yr, pmDE = –1.7 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS J021944.9–102549, HR1 = 0.51, HR2 = 0.30.
Spectral type: K0e (White et al. 2007).
Spectroscopic binary; period = 8.1194 d, (Pourbaix et al. 2004).
ASAS variable type: DCEP-FO.

4. J–K = 0.834 (2MASS).
Proper motion: pmRA = 3.2 mas/yr, pmDE = –2.2 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS J025111.7–475314, HR1 = 0.41, HR2 = 0.11.
Spectral type: K5 (Riaz et al. 2006).
ASAS variable type: DCEP-FU.

5. Johnson B–V = 1.076 (derived from Tycho-2); J–K = 0.781 (2MASS).
Proper motion: pmRA = 77.1 mas/yr, pmDE = 70.2 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS J032738.6–580937, HR1 = 0.78, HR2 = 0.68.
Spectral type: K2IVe, EW(Li) = 110 (Torres et al. 2006).
ASAS variable type: DCEP-FU.

6. J–K = 0.777 (2MASS).
Proper motion: pmRA = 0.7 mas/yr, pmDE = 1.9 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS-F J033411.6–414307, HR1 = 0.90, HR2 = 0.34.
ASAS variable type: DCEP-FU/ELL.

7. Johnson B–V = 1.184 (derived from Tycho-2); J–K = 0.783 (2MASS).
Proper motion: pmRA = 10.2 mas/yr, pmDE = –25.3 mas/yr (Roeser et al. 2010).
Spectral type: K0 (White et al. 2007).
ASAS variable type: DCEP-FU.

8. J–K = 0.790 (2MASS).

Proper motion: pmRA = 0.3 mas/yr, pmDE = –15.0 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS-F J040038.5–601338, HR1 = 1.00, HR2 = 0.19.
ASAS variable type: DCEP-FO/ELL.

9. Johnson B–V = 1.207 (derived from Tycho-2); J–K = 0.705 (2MASS).
Proper motion: pmRA = –0.8 mas/yr, pmDE = –3.8 mas/yr (Roeser et al. 2010).
ASAS variable type: DCEP-FU/SR.

10. J–K = 0.850 (2MASS).
Proper motion: pmRA = –4.0 mas/yr, pmDE = –0.5 mas/yr (Roeser et al. 2010).
ASAS variable type: DCEP-FU/EC.

11. Johnson B–V = 0.660 (derived from Tycho-2); J–K = 0.807 (2MASS).
Proper motion: pmRA = 14.2 mas/yr, pmDE = 5.2 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS J063656.7–052104, HR1 = 0.80, HR2 = 0.35.
Spectral type: K7 (Riaz et al. 2006).
ASAS variable type: MISC.

12. J–K = 0.864 (2MASS).
Proper motion: pmRA = –1.7 mas/yr, pmDE = –1.3 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS-F J071748.9–335658, HR1 = 0.22, HR2 = 0.97.
ASAS variable type: DCEP-FU/EC.

13. Johnson B–V = 0.960 (derived from Tycho-2); J–K = 0.766 (2MASS).
Proper motion: pmRA = –20.5 mas/yr, pmDE = –0.7 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS-F J073642.3+035433, HR1 = 0.67, HR2 = 0.01.
ASAS variable type: DCEP-FU/EC.

14. Johnson B–V = 1.061 (derived from Tycho-2); J–K = 0.675 (2MASS).
Proper motion: pmRA = 5.7 mas/yr, pmDE = –13.8 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS-F J074517.5+202332, HR1 = 0.28, HR2 = 0.07.
Spectral type: G5 (Wright et al. 2003).
ASAS variable type: CW-FU.

15. Johnson B–V = 0.727 (derived from Tycho-2); J–K = 0.662 (2MASS).
Proper motion: pmRA = –5.1 mas/yr, pmDE = 1.3 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS-F J103533.0–535225, HR1 = 0.79, HR2 = 0.08.
ASAS variable type: EC/DCEP-FU.

16. J–K = 0.946 (2MASS).
Proper motion: pmRA = –50,2 mas/yr, pmDE = –0,2 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS-F J112105.2–384529, HR1 = –0.03, HR2 = –0.17.
Spectral type: M1Ve, EW(Li) = 550 (Torres et al. 2006).
ASAS variable type: DCEP-FU/DCEP-FO.

17. Johnson B–V = 0.992 (derived from Tycho-2); J–K = 0.733 (2MASS).
Proper motion: pmRA = –9.6 mas/yr, pmDE = 0.7 mas/yr (Roeser et al. 2010).
ASAS variable type: DCEP-FU/EC/ESD.

18. J–K = 0.837 (2MASS).
Proper motion: pmRA = –35.8 mas/yr, pmDE = –15.4 mas/yr (Roeser et al. 2010).
ASAS variable type: DCEP-FU/EC.

19. Johnson B–V = 1.020 (derived from Tycho-2); J–K = 0.689 (2MASS).
Proper motion: pmRA = –204.8 mas/yr, pmDE = 46.2 mas/yr (Roeser et al. 2010).

ROSAT: 1RXS J122447.4–750309, HR1 = –0.09, HR2 = –0.12.
Spectral type: K3Ve, EW(Li) = 0, remark: SB2 (Torres et al. 2006).
Period = 0.8899 d (Koen et al. 2002).

20. Johnson B–V = 1.044 (derived from Tycho-2); J–K = 0.72 (2MASS).
Proper motion: pmRA = –15.1 mas/yr, pmDE = –36.2 mas/yr (Roeser et al. 2010).
ROSAT: 1WGA J1235.9+1329 (White et al. 2000).
ASAS variable type: CW-FO/CW-FU/EC.

21. Johnson B–V = 1.421 (derived from Tycho-2); J–K = 0.830 (2MASS).
Proper motion: pmRA = –1.9 mas/yr, pmDE = –3.9 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS J173603.8–471016, HR1 = 0.51, HR2 = 0.08.
Spectral type: K1IIIe, EW(Li) = 0, SB3? (Torres et al. 2006).
ASAS variable type: DCEP-FU.

22. Johnson B–V = 0.995 (derived from Tycho-2); J–K = 0.775 (2MASS).
Proper motion: pmRA = 1.8 mas/yr, pmDE = –2.0 mas/yr (Roeser et al. 2010).
ROSAT: 2RXP J173651.1–442007.
ASAS variable type: EC/DCEP-FU/ESD/SR.

23. Johnson B–V = 0.933 (derived from Tycho-2); J–K = 0.745 (2MASS).
Proper motion: pmRA = –60.3 mas/yr, pmDE = –52.4 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS J174625.4+035852, HR1 = 1.00, HR2 = 0.22.
ASAS variable type: DCEP-FU.

24. Johnson B–V = 0.675 (derived from Tycho-2); J–K = 0.473 (2MASS).
Trigonometric parallax: 13.25 +/– 1.41 milliarcseconds (Hipparcos Catalog). Distance: 75.5 +/– 8.0 parsecs (246 +/– 26 light years). Luminosity: 1.54 +/– 0.33 times that of the Sun. Absolute magnitude: 4.33 +/– 0.23.
Proper motion: pmRA = 3.1 mas/yr, pmDE = –46.8 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS J181952.6–291623, HR1 = 0.06 , HR2 = 0.21.
Spectral type: G5V, EW(Li) = 290 (Torres et al. 2006).
ASAS variable type: RRAB/ESD.

25. Johnson B–V = 1.389 (derived from Tycho-2); J–K = 0.929 (2MASS).
Proper motion: pmRA = 15.6 mas/yr, pmDE = –20.6 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS J183219.2+021456, HR1 = 0.81, HR2 = 0.25.
Spectral type: K2IIIe, EW(Li) = 180 (Torres et al. 2006).
ASAS variable type: DCEP-FU.

26. Johnson B–V = 1.227 (derived from Tycho-2); J–K = 0.784 (2MASS).
Proper motion: pmRA = 37.6 mas/yr, pmDE = –16.0 mas/yr (Roeser et al. 2010).
ASAS variable type: CW-FU.

27. Johnson B–V = 0.942 (derived from Tycho-2); J–K = 0.735 (2MASS).
Proper motion: pmRA = 1.9 mas/yr, pmDE = –1.2 mas/yr (Roeser et al. 2010).
ROSAT: 1RXS J204535.3–394939, HR1 = 0.17, HR2 = –0.02.
Spectral type: K0III(e), EW(Li) = 80, remark: SB2 (Torres et al. 2006).
ASAS variable type: CW-FU.

28. Johnson B–V = 1.228 (derived from Tycho-2); J–K = 0.772 (2MASS).
Proper motion: pmRA = –8.8 mas/yr, pmDE = –21.3 mas/yr (Roeser et al. 2010).
ASAS variable type: CW-FU.

29. J–K = 0.816 (2MASS).
Proper motion: pmRA = –25.9 mas/yr, pmDE = –21.3 mas/yr (Roeser et al. 2010).

ROSAT: 1RXS-F J211220.3–333622, HR1 = 0.65, HR2 = 1.00.
ASAS variable type: CW-FU.

30. J–K = 0.777 (2MASS).
Proper motion: pmRA = 7.9 mas/yr, pmDE = –16.0 mas/yr (Roeser et al. 2010).
ASAS variable type: CW-FU.

## Remarks:

30 new RS CVn and BY Dra variables were found by the investigation of ASAS-3, light curves (Pojmanski 2002). Each object was checked against the Strasbourg CDS Vizier service and the International Variable Star Index for pre-existence as a chromospherically active star in variability catalogues.

The criteria for including a star in this list of RS CVn stars after an analysis of the available data with Period 04 (Lenz and Breger 2005) were:

i) period, amplitude and shape of the light curve are consistent with the definition of RS CVn and BY Dra in the GCVS;

ii) appropriate spectral types, 2MASS J–K (Skrutskie et al. 2006) and B–V (Høg et al. 2000) colour indices;

iii) the X-ray identifications (Voges et al. 1999; Voges et al. 2000);

iv) the relation of the maximum amplitude vs. periods of main sequence stars given in Messina et al. (2003);

v) further information like the lithium content as indicator of young stellar objects and proper motions.

According to the definitions of the GCVS, chromospherically active stars of the BY Dra type are emission line dwarfs (single or binary), which have spectral types K–M. RS CVn variables are chromospherically active binary systems which have spectral types of F–K (many of these systems contain a subgiant or giant component). Spectral information and the relation of the maximum amplitude vs. periods of main sequence stars given in Messina et al. (2003) were used to distinguish between these two types.

Some of these chromospherically active stars showed a clear variation of the shape of the light curves. For these objects the ephemeris and the folded light curves are given for a distinct period of time (described in figure as HJD 245....–....). This is somewhat typical of chromospherically active stars which can show secular variation in mean magnitude and/or amplitude as a result of starspot cycles similar in nature to the Suns`s sunspot cycle.

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